
Retrospective Theses and Dissertations

1975

The Effects of Opinion Certainty, Counterattitudinal Advocacy, and Salience of Initial Attitude Upon Attitude Change

Jack Alan Haight
University of Central Florida

 Part of the [Communication Commons](#)

Find similar works at: <https://stars.library.ucf.edu/rtd>

University of Central Florida Libraries <http://library.ucf.edu>

This Masters Thesis (Open Access) is brought to you for free and open access by STARS. It has been accepted for inclusion in Retrospective Theses and Dissertations by an authorized administrator of STARS. For more information, please contact STARS@ucf.edu.

STARS Citation

Haight, Jack Alan, "The Effects of Opinion Certainty, Counterattitudinal Advocacy, and Salience of Initial Attitude Upon Attitude Change" (1975). *Retrospective Theses and Dissertations*. 154.
<https://stars.library.ucf.edu/rtd/154>



THE EFFECTS OF OPINION CERTAINTY,
COUNTERATTITUDINAL ADVOCACY, AND SALIENCE
OF INITIAL ATTITUDE UPON ATTITUDE CHANGE

BY

JACK ALAN HAIGHT
B.A., Florida Technological University, 1974

THESIS

Submitted in partial fulfillment of the requirements
for the degree of Master of Communication
in the Graduate Studies Program of
Florida Technological University

Orlando, Florida
1975

Acknowledgement

To my wife Karen, without whom this thesis would never have been started nor would it have been completed.

Table of Contents

Review of Related Research.....	1
Justification for Study.....	3
Purpose.....	35
Hypotheses.....	35
Method.....	36
Overview of Design.....	36
Subjects.....	37
Independent Variables.....	37
Dependent Variables and Manipulation Checks.....	39
Procedure.....	40
Data Analysis.....	43
Results.....	44
Manipulation Checks.....	44
Effects upon Dependent Variables.....	47
Discussion.....	50
Summary.....	54
Appendix A.....	55
Appendix B.....	56
References.....	65

How do we come to know ourselves? This problem has intrigued man for thousands of years. And as with many of the great philosophical questions about the nature of man, social science is starting to provide an answer. It seems that "self-awareness, one's ability to respond differentially to his own behavior and its controlling variables, is a product of social interaction" (Bem, 1965, p. 199). One explanation of how the social milieu affects our own self-awareness is provided by Daryl J. Bem.

Bem's self-perception theory is relatively straightforward. Two propositions comprise the heart of this theory: "First, individuals come to 'know' their own attitudes and other internal states partially by inferring them from observations of their own overt behavior and the circumstances in which it occurs. Thus second, to the extent that information from internal cues is weak, ambiguous, or uninterpretable, the individual is functionally in the same position as an outside observer of his behavior, an observer who, necessarily, must rely upon those same external cues to infer the individual's inner states" (Bem and

McConnell, 1970, p. 23). In other words, "An individual's belief and attitude statements and the beliefs and attitudes that an outside observer would make are often functionally equivalent in that both sets of statements are 'inferences' from the same evidence: the public events that the socializing community originally employed in training the individual to make such self-descriptive statements" (Bem, 1965, p. 200).

This theory has received a number of applications. First, a number of studies have shown that individuals sometimes infer their own emotional states by observing external cues in their environment (Bandler, Madaras, and Bem, 1968; Berkowitz, Lepinski and Angulo, 1969; Davison and Valins, 1969; Kopel and Arkowitz, 1974; Misovich and Charis, 1974; Nisbett and Schacter, 1966; Schacter, 1964; Schacter and Singer, 1962; Turner and Berkowitz, 1972; Valins, 1966; Valins, 1967). Kelley (1967) integrated self-perception theory with attribution theory. Nisbett and Valins (1971) have demonstrated its utility in a wide variety of situations in which self-inferences seem to be made from overt and autonomic behavior. Lepper (1973) has shown the applicability of self-perception theory to Freedman and Sears' "foot-in-the-door technique."

However, the most important application of self-perception theory is to attitude formation and change. In terms of attitude formation Bem argues that people do indeed on occasion infer their beliefs and attitudes from observing their own overt behavior, particularly when internal cues are weak and/or uninterpretable. In terms of attitude change, Bem has attempted to re-interpret the large corpus of cognitive dissonance theory findings in terms of self-perception theory. There is a heated controversy between dissonance theorists and self-perception theorists over the validity of their respective theories. Dissonance theory, following Festinger (1957), assumes that individuals try to maintain some consistency in their beliefs. "Two elements of knowledge 'are in dissonant relation if, considering these two alone, the obverse of one element would follow from the other.'" Further, dissonance, 'being psychologically uncomfortable, will motivate the person to try to reduce dissonance and achieve consonance' and 'in addition to trying to reduce it, the person will actively avoid situations and information which would likely increase the dissonance' (Zajonc, 1960, p. 190). Simons (1971) estimated that over three hundred studies have supported predictions derived from this theory.

Attitude formation and change obviously constitute important areas of study. The most general and most supported (in terms of empirical research findings) theory of attitude change is cognitive dissonance theory. The most important competing theory to dissonance is self-perception theory in that only the latter attempts to explain all of the ramifications of dissonance theory. There are other competing theories (chiefly reinforcement theory) but these are only partial in scope. Therefore, given that attitude change constitutes an important area of study, it seems highly desirable to know whether the most general theory of this process (dissonance theory) or it's chief competitor (self-perception theory) is correct.

There have been many studies conducted in an attempt to resolve this controversy. The first one was conducted by Bem (1965). In the first part of the study, subjects were asked to state that cartoons were either "very funny" or "very unfunny." Each statement was made in the presence of one of two colored lights. One of the colored lights (the truth light) signified that the subject was telling the truth. The other light signified that the subject was making a false statement (the lie light). After the subject made his statement while the light was on, he rated

his "true" attitude on a rating scale. The results showed that the ten cartoons commented upon by the subjects in the presence of the truth light were ranked further from the neutral point in the direction of self-persuasion ("very funny" or "very unfunny") than the ten cartoons commented upon by the subject in the presence of the lie light. Subjects were evidently inferring their beliefs from external cues, i.e., the lights.

In the second part of this study, Bem offered an initial alternative explanation for dissonance theory results. Bem did not think it was necessary or parsimonious to postulate a drive-reduction mechanism. Bem suggested rather that if a person behaves counter to his attitudes, he will infer what his "true" attitudes are from observations of his own behavior without experiencing any aversive motivational pressure. Any attitude change "is viewed simply as a self-judgment based on the available evidence, evidence that includes the apparent controlling variables of the observed behavior" (Bem, 1967, p. 188).

Bem sought to find evidence in support of his theory by replicating two dissonance experiments within what he called his "interpersonal replication" paradigm. That is, he assumed that if his interpretation of dis-

sonance theory was correct, then external observers should be able to accurately replicate the attitude of one of the original dissonance experiment subjects. In the first dissonance experiment, subjects were offered either \$.50, \$1, \$5, or \$10 to write a counterattitudinal essay. The results showed that attitude change was inversely related to level of incentive. In the second dissonance experiment, hungry subjects, after engaging in a series of tasks, were asked to volunteer for further testing. Half of the subjects were offered \$5 for volunteering, half were offered nothing. Subjects were given a posttest on hunger after they had volunteered. The results showed that those subjects who were offered the money rated themselves significantly more hungry than those who had volunteered for nothing. In separate studies, Bem described these two experiments to external observers and asked them what the original subjects' attitudes would have been at the end of the experiments. In both cases, external observers were able to closely replicate the results obtained from the original subjects. From this, Bem concluded that the judgments made by the dissonance subjects regarding their own behavior did not differ significantly from judgments made by external observers.

pos
accord
to dis
theory

A follow-up study by Bem (1966) produced similar results to the first part of the 1965 study. Subjects had to cross off fifty words on a one hundred word list. The list was taken away. Using a pre-determined schedule, the experimenter announced a word and instructed the subject either to state that he had or had not crossed out the word earlier. Half of these "confessions" were true and half were false. The subject made his "confession" in the presence of either a truth light or a lie light. After each confession, the subject entered the word onto a sheet of paper and indicated on a five-point scale how sure he was of having crossed out the word or not. The results showed that false confessions emitted in the presence of the truth light produced more errors of recall than either false confessions emitted in the presence of the lie light or no control at all. Subjects were also less sure of their false confessions when they were made under the truth light than when they were made under the lie light or no light at all.

Bem's 1965 reinterpretation of dissonance theory results is relatively loose. He made a more rigorous presentation in 1967 when his specific purpose was to present an alternative explanation for dissonance theory. Bem chose to replicate the Festinger and Carlsmith (1959)

experiment in which subjects who received \$1 for engaging in counterattitudinal advocacy changed their attitudes to match their behavior more than did subjects who received \$20 for doing the same task. Dissonance theory interprets these results by assuming that subjects who state that a dull task is interesting to another person for \$20 can easily justify their behavior in terms of the large reward. Subjects cannot justify this lie in terms of \$1. Thus they experience dissonance (they believe one thing but are arguing for another). This dissonance motivates the person to move to consonance. The way to do this is to change one's attitude to match the behavior, i.e., subjects believe that the task was not so boring after all.

Bem argued that an external observer would replicate these results. If a person sees another person making favorable statements about a dull task for \$20, he will assume that the person does not really believe what he is saying, that he is only doing it for the money. Consequently, the observer would conclude that the individual really thinks the task is dull in spite of what he said. If a person says a dull task is interesting and is only paid \$1 for doing so, though, an external observer would be more likely to judge the person to be expressing his "true" attitude

and hence would infer that attitude from the content itself. Bem replicated the Festinger and Carlsmith study using his interpersonal replication paradigm. He described to his subjects the experimental situation facing one of the participants in the dissonance experiment and asked them to predict the participant's attitude at the end of the experiment. The results were similar to Festinger and Carlsmith's results on two separate trials.

The three studies replicated so far by Bem all dealt with the forced compliance paradigm of dissonance theory. This paradigm exists when a subject is forced by either the promise of a reward or the threat of a punishment to argue publicly for a position he does not believe in. Bem also sought to replicate a study utilizing the free choice paradigm. In this type of study, subjects are simply asked to make a choice from among a number of alternatives. Dissonance is presumably aroused because the rejected choices contain positive features that would have warranted their acceptance, and the chosen alternative contains negative features that would have warranted its rejection. To reduce dissonance, subjects are theoretically motivated to rate the chosen alternative as more favorable than the initial rating and the rejected alter-

natives as more negative than their initial ratings after the choice has been made. External observers of the subjects in the free choice study also replicated the original subjects' results. Bem offered a theoretical explanation of the selective exposure hypothesis of dissonance theory but unfortunately did not replicate any of the experiments in this area.

Judson Mills (1967) criticized the previous study of Bem's by noting that Bem did not tell his subjects what the initial attitudes of the participants in the various dissonance experiments were. Mills argued that Bem's subjects could conclude that the person's liking for the task determined how much he was paid. Mills concluded that "Bem has not shown that naive observers can accurately predict the changes in liking for the tasks found by Festinger and Carlsmith" (Mills, 1967, p. 535).

Bem (1967) responded to Mills by arguing that his subjects' task was not to predict attitude change, which is only a psychological reality to the experimenter who can compare experimental groups with control groups. Rather his interpersonal simulations reproduced the phenomenology of the dissonance experiments from the original participants' point of view. And since participants' initial attitudes were not measured in

most dissonance experiments (because they were after-only designs), Bem obviously could not tell his observers what they were. Because the original subjects had no baseline with which to compare their attitude, it appears that they had to infer their attitudes from their own behavior, even as Bem's external observers inferred the participants' attitudes from the latter's behavior.

Jones, Linder, Kiesler, Zanna and Brehm (1968) leveled the next attack at Bem. Their arguments were as follows:

The descriptions used by Bem suggest that a typical hypothetical subject would be quite unwilling to comply with the experimenter's request in the first place. However, the hypothetical subject in the description does perform the requested behavior. Observers should therefore infer that their subject was atypical and that he was initially more willing to comply than most subjects. Further, a subject who complied for a small incentive would be seen as more atypical than a subject who complied for a large incentive. Our alternative explanation asserts that Bem's observer-subjects were not behaving according to his self-perception hypothesis, but rather that

they merely judged differential hypothetical subject self-selection. (Jones, Linder, Kiesler, Zanna and Brehm, 1968, p. 249).

They then presented five experiments showing that external observers could not replicate Bem's results if the initial attitudes of the original dissonance subjects were made salient, and that observers could accurately predict only when there was no such manipulation.

Bem (1968) responded to Jones et al. on two levels. First, he argued that the previous study in no way contradicts self-perception theory. Bem noted that both the original dissonance experiments and his replications had subjects rate an attitude immediately after a counterattitudinal behavior. Engaging in such behavior may provide such strong cues for the experimental subject that any control exercised by the initial attitude would be swamped. Therefore, when Jones et al. made the initial attitude salient by presenting it before the posttest, of course they made Bem's replications impossible. But Bem argued that such a manipulation would also have ruined the original dissonance experiments. He also noted that the results of one of the author's work showed that observers can replicate dissonance findings when given the initial

attitude if they also can hear the subject engaging in the counterattitudinal behavior as well.

Bem responded second by arguing that interpersonal simulations are like computer simulations. The experimenter must abstract what is significant from the original behavior to construct his "program." If the wrong "input statements" are selected, then the simulation will not succeed in producing "output statements" that match the original experiment, which is all that Jones et al. have demonstrated, according to Bem.

Kiesler, Nisbett and Zanna (1969) provided further support for the hypothesis that people infer their beliefs from their behavior. Subjects were led to believe that they were going to deliver arguments against air pollution for passers-by in the street. At the same time, confederates were asked to argue for promoting auto safety. The confederate stated that he was willing to argue in favor of auto safety either because (a) he believed strongly in auto safety (belief-relevant condition); or because (b) the experiment was scientifically valuable (belief-irrelevant condition). It was found that belief-relevant subjects were more opposed to air pollution than the belief-irrelevant subjects were. The authors made the fol-

lowing conclusion:

Mere commitment to proselytizing behavior did not cause subjects to believe more strongly in the importance of combatting air pollution....The subjects' intentions to proselytize against air pollution had nothing to do with their personal views on the topic....It was necessary to introduce a cue of belief relevance for the belief inference to occur....When a model indicated that his intentions to perform a similar task were influenced by his convictions, subjects apparently assumed that they were similarly motivated by their beliefs. (Kiesler, Nisbett and Zanna, 1969, p. 326)

Bem and McConnell's 1970 experiment provided empirical support for Bem's (1968) reply to Jones, et al. (1968). In this study, the authors found that subjects in a typical forced-compliance experiment were not only unable to recall their premanipulation attitudes correctly, but they actually perceived their postmanipulation attitudes as being identical to their premanipulation attitudes. In other words, subjects in this dissonance experiment did not perceive any attitude change. This supported Bem's contention that subjects' initial attitudes are not a salient part

of the interpersonal replication paradigm. Subjects counterattitudinal behavior apparently does cancel out any effects of the pretest.

In all of the studies reviewed to this point, the two theories were not tested in paradigms where the two would make different predictions as to the experimental outcome. Such studies are needed if we are to tell which theory is more viable. Fortunately, research has been done on the effects of five variables about which the two theories make competing predictions.

The first of these variables is motivation. Cognitive dissonance theorists maintain that dissonance causes the person to feel uncomfortable. He is thus motivated to reduce the unpleasantness by changing his attitude. Self-perception theory maintains that the individual simply infers his belief from his behavior without experiencing any such pressure. Thus, if it can be shown that dissonance is a state that does indeed possess motivational properties, self-perception theory would suffer a major setback. Six studies have shown that dissonance is such a state.

The first is by Waterman and Katkin (1967). In this experiment, subjects wrote a counterattitudinal essay. Then they had to learn either a simple or a complex task. Since Hull-Spence drive theory predicts

that high-drive states have an energizing effect upon dominant, well-learned responses, Waterman and Katkin predicted enhanced learning of the simple task and decreased learning of the complex task. The results showed that dissonance-aroused subjects did indeed learn the simple task better than control subjects but there was no interference with the learning of the complex task. Thus dissonance theory predictions were only partially upheld.

Cottrell and Wack (1967) manipulated justification for performing a word learning task within a dissonance framework. Prior to the task high dissonance subjects were told that they would not get promised classroom credit for performing the experiment and that the study they were participating in was not particularly meaningful. Low dissonance subjects were read a neutral passage. Subjects were then required to learn ten Turkish words that were presented in varying frequencies to the subjects (i.e., subjects learned the words to differing degrees). The dependent measure was the number of times words of each training frequency were emitted on "pseudo-recognition" trials. On these trials, subjects believed they were viewing the words subliminally but actually nonsense words were presented. It was found that, consistent with Hull-Spence

drive theory, dissonance enhanced the emission of words that had been learned better and reduced the emission of words that were not learned as well.

Pallak, Brock and Kiesler (1967) found in five separate experiments that high choice subjects retained paired associates words better than did low choice subjects. These results are consistent with the dissonance theory prediction that subjects often will seek to avoid dissonance by concentrating on the task. The authors ruled out the following alternative explanations based on data gathered in the five experiments: differential rehearsal of the words, anticipation of the recall measure, differential attractiveness of the words, method of presentation of material, subject attrition, variation in the confederate's behavior, low choice subject hostility and differential reward for participation. It is not known how self-perception theory would account for these results.

Waterman (1969) manipulated three variables in a $2 \times 2 \times 2$ factorial design. Subjects were randomly assigned to either a dissonant or consonant condition in which they were either simply committed to or both committed to and actually wrote an essay, after which they engaged in either a simple or complex word learning task. Waterman predicted that if dissonance truly did

have drive-arousing properties, then it would enhance performance on the simple task and impede performance on the complex task. The results showed that, as predicted, dissonance subjects took fewer trials than the consonant group on the simple task and more trials than the consonant group on the complex task. The dissonance x task interaction was marginally significant, $F(1,112) = 3.79$, $p < .10$. In terms of the number of errors made while accomplishing the task, the dissonant group made fewer errors than the consonant group on the simple task and more on the complex task. The dissonance x task interaction was significant, $F(1,112) = 5.63$, $p < .05$.

The fifth study of dissonance motivation was conducted by Cottrell, Rajecki and Smith in 1974. Forty subjects participated in the experiment. All subjects ranked twelve consumer items. Half of the subjects were required to choose between two closely rated items thus experiencing post-decision dissonance, while the other half did not do so. All subjects then were required to learn ten nonsense words that subjects learned at differential levels (some of the words were learned better than others). Finally, all subjects ranked the twelve consumer items again. Compared to the no-dissonance condition, the post-decision dissonance

subjects gave more verbal responses of words that they had learned better which (according to Hull-Spence theory) indicates the presence of increased drive. The dissonance subjects also produced the usual dissonance reduction results by increasing the desirability of the chosen alternative, and decreasing the desirability of the rejected alternative.

Zanna and Cooper (1974) conducted the sixth study designed to test the notion that dissonance has arousal properties. Two variables were manipulated in a 2 x 3 design. Subjects wrote counterattitudinal essays under conditions of high choice or low choice. All of the subjects took a pill prior to writing the essay. One-third of the subjects were led to believe that the pill would make them relaxed, one-third believed it would make them tense and the final third were led to believe the pill would have no effect. The results conformed to dissonance theory predictions. In the no-effect condition, the standard dissonance effect was found. That is, high-choice subjects agreed more with the position taken in their counterattitudinal essay than did low-choice subjects. In the arousal condition, subjects could attribute their arousal to the pill and the dissonance effect in terms of attitude change was eliminated. In the relaxed condition, the dissonance

effect was magnified. The authors reasoned that subjects who felt arousal after writing the counterattitudinal essay despite the fact that they were supposed to feel relaxed would find more of a need to change their attitudes. Notice that while this experiment does support dissonance theory predictions, it does so only to the extent that attribution theory (of which self-perception theory is a special case) is correct.

9 Arrowood, Wood and Ross (1970) developed the second area of competitive prediction when they attempted to show that dissonance results would ensue even if there was no behavior from which to infer beliefs. Theoretically, self-perception theory could not account for such results. All subjects were told that they would prepare to take one of two IQ tests but that only some of them would be taking the prepared-for test; the rest would be taking the second test, for which their preparation would be irrelevant. Half of the subjects were led to believe that they would have to spend thirty to thirty-five minutes memorizing words in preparation for the test. The other half of the subjects were led to believe that they would simply have to read over the words once. The results showed that high-anticipated-effect subjects were more likely than low-anticipated-effect subjects to predict that they would write the

preparation-relevant IQ test. However, when these subjects were asked to predict which test other subjects would take, these results were not replicated. In fact, there was no consistent pattern of response. The authors interpreted these findings as supporting dissonance theory. They reasoned that subjects felt aversive motivational pressure themselves to reduce the dissonance, pressure that did not generalize to perceptions of others.

However, Williams, Crawford and Haaland (1974) pointed out three problems with the Arrowood, et al. study:

To test self-perception, subjects should not have been asked to predict a chance event but, instead, asked "Which of the tests do you think he thinks he will write?" Second, it follows from dissonance theory that high effort subjects should have both expected and preferred the appropriate test. No difference in preference was found. Moreover, the running procedure confounded experimenter and/or running time with the critical effort manipulation. (Williams, Crawford and Haaland, 1974, p. 319)

The authors ran a study identical to the Arrowood, et al. study but with corrections of the above three

errors. The results showed that high effort subjects indicated greater anticipated effort than low effort subjects. Yet both groups expected their chances of getting the preparation-relevant test to be fifty-fifty. Likewise, both groups predicted that other subjects would also expect fifty-fifty odds. And contrary to dissonance theory predictions, high effort subjects preferred the effortless task significantly more than low effort subjects. Thus it is questionable whether the Arrowood, et al. study gives support to dissonance theory over self-perception theory.

The third variable is the illusion of uniqueness. Cooper, Jones and Tuller (1972) conducted a study to determine if it makes a difference in terms of attitude change if the subject thinks he is relatively unique in complying with the experimenter's request to participate in the experiment. In a 2 x 3 design, the experimenters manipulated the level of incentive (\$2.50 or \$.50) and the perceived uniqueness of subjects. For the latter variable, subjects perceived themselves as either unique (situational cues indicated that proportionally very few students contacted had volunteered to engage in counterattitudinal behavior); non-unique (situational cues indicated that proportionately most students contacted had volunteered to participate in

the experiment); or neutral (there was no mention of the compliance rate of other students). The results showed the typical effect of incentive in dissonance experiments, i.e., \$.50 subjects changed their attitudes more than did \$2.50 subjects in the direction of their counterattitudinal behavior. Uniqueness had no significant effect. The authors interpreted this as being evidence against self-perception theory. However, the whole experiment was based on a faulty assumption.

The authors stated that:

If a subject agrees to perform an attitude-discrepant task and is told that he is virtually the only person to comply with the experimenter's request, then according to Kelley's attributional interpretation (but not dissonance theory), he should manifest considerable change in the direction of his behavior regardless of the amount of incentive he is offered for his compliance. On the other hand, if the subject is made to believe that all persons who were requested to perform the task consented to do so, then the attributional view would hold that subjects will make an entity attribution and be no more in agreement with the attitude-discrepant position than subjects in a control group. (Cooper, Jones and Tuller, 1972,

p. 49)

Yet two pages back the authors indicated what Kelley's position really is:

According to Kelley, when an individual observes himself performing a counterattitudinal task in a forced-compliance situation, he must decide whether to make an entity or a person attribution. He must ask himself, "Did I behave this way because anyone would have under the circumstances or did I do something that very few others would have done?"... The inverse relationship between incentive and attitudes is seen as a function of the covariation between incentive and the illusion of uniqueness: as the incentive for compliance is reduced, the illusion of uniqueness is increased. For dissonance theory, the illusion of uniqueness is largely irrelevant since subjects' attitudes are a function of their own behaviors and beliefs rather than the behavior of others. (Cooper, Jones and Tuller, 1972, pp. 47-48)

Kelley's formulation is that subjects perceive the level of incentive and then make an attribution of uniqueness dependent upon that perception. There are two reasons why this experiment does not constitute a valid test of this formulation. First, subjects in this experiment

do not make an attribution of uniqueness based upon the level of incentive as required by Kelley. The attribution is based rather on the ratio of acceptance to refusal slips. Second, Kelley defined the attribution of uniqueness as being dependent upon the level of incentive. Yet in this experiment the two are manipulated independently of each other. A more valid test of attribution theory would be to force subjects to engage in counterattitudinal essay writing and then ask them to indicate the percentage of subjects they think complied with the experimenter's request to participate in the experiment. This figure should then be compared to a similar guess made by subjects who did not engage in counterattitudinal essay writing.

The fourth variable about which dissonance and self-perception theories make competing predictions is commitment. Kiesler, Roth and Pallak (1974) conducted two experiments manipulating commitment to determine whether dissonance or self-perception theory best explained the results. In the first experiment, subjects were committed to reading a speech consonant with their opinions either publicly (high commitment) or privately (low commitment). After commitment but prior to the reading, subjects were given a choice of two tasks to perform. The first would make the subject think about how others

would react to the content of the recorded speech. The second task was a nonsense-syllable one irrelevant to the commitment. Attribution theory predicts that subjects would choose the first task. Selective exposure studies suggest that subjects would choose the second task. The results showed that as the level of commitment increased, fewer subjects chose the relevant task. In other words, under conditions of high commitment, subjects are unlikely to engage in any behavior that would force critical self-examination of one's beliefs.

Experiment two consisted of two parts. The first part simply replicated experiment one. In the second part, subjects were randomly assigned to one of three commitment conditions: high, low and none. Prior to recording the speech, subjects in the high and low conditions had the choice of either completing the same boring irrelevant task as used previously in experiment one, or a relevant task which allowed subjects to re-interpret their prior behavior (the commitment) as attitudinally innocuous. As predicted, when faced with the choice between a dull task and one which forced consideration of one's commitment, highly-committed subjects chose the irrelevant dull task. However, when given a choice between the same dull task and one which allowed the innocuous reinterpretation, highly committed

subjects chose the latter.

The authors were quick to point out that this study does not support dissonance theory because consonant behavior was manipulated in this study, not dissonant behavior.

The authors concluded that several assumptions should be added to the process of self-attribution:

- (a) Often attitudes are not well articulated;
- (b) As a result, the attitudinal implications of one's actions are often ambiguous to self; and
- (c) When the implications of one's actions could be negative, the implications are not passively accepted. Instead, one often avoids thinking about the implications or strives actively to reinterpret the original behavior. Perhaps the cognitive consequences of attributional manipulations do not occur until or unless the experimenter forced them by asking questions the subject is trying to avoid. (Kiesler, Roth and Pallak, 1974, p. 714)

The fifth variable is the reinstatement of initial subject attitudes. Self-perception theory predicts that reminding the subject of his initial attitude would eliminate the dissonance effect.

The failure of Jones et al. to replicate dissonance findings when a conflicting "initial" attitude of

the subject is made salient for the observer, suggests that a similar salience manipulation introduced into the original dissonance study just prior to the final attitude assessment would similarly destroy the original experimental finding. That is, the data of Jones et al. can be viewed as evidence in favor of our original decision to regard the initial attitudes of subjects as non-salient in their postmanipulation phenomenology, and as evidence against the guess of Jones et al. that these attitudes are salient. (Bem, 1967, p. 271)

Dissonance theory, on the other hand, predicts that there will be even more attitude change in the direction of the counterattitudinal behavior because subjects will be reminded all the more clearly of the contradiction between their attitude and their behavior.

Harris and Tamler (1971) conducted the first study of this issue. In their study, subjects completed a pretest on a topic one day during class. One week later, when they reported for the experiment, they were reminded of what their initial attitude was, and then were asked to write a counterattitudinal essay on the topic for either \$2.50 or \$.50. Subjects then completed a posttest on the key item. The results showed that

there was more attitude change in the low incentive condition than in the high incentive condition. The authors concluded that dissonance theory was supported over self-perception theory.

The second study of reinstated initial attitudes was done by Snyder and Ebbeson (1972). All subjects participated in counterattitudinal essay writing. There were two independent variables. Two levels of choice were manipulated: choice and no choice. There were four levels of salience: nothing salient, attitudes salient, behavior salient, and both attitude and behavior salient. A no-essay control group was included as a reference point. The results showed that when neither attitudes nor behavior were salient, subjects agreed with their essays more under choice than under no choice conditions. Both theories had predicted this outcome. When initial attitudes were made salient, choice subjects agreed less with their essays and no choice subjects agreed more with their essays than when initial attitudes were not made salient. Dissonance theory predictions were directly contradicted by these findings. Self-perception theory was supported by these results, but not for the reasons Bem would have cited. Both theories predicted that behavior salience would increase the effect of choice. However, the re-

sults showed that this variable had no effect on final attitudes. The authors explained these findings by simply extending self-perception theory:

In self-perception theory, perception of the behavior is a constant and choice is thought to determine the relevance of the behavior to the attitude judgment. In the present approach, perception of the behavior is not constant.

Instead, choice determines perception of the behavior which in turn determines the attitude estimate. Thus, choice mediates perception of behavior rather than (or possibly in addition to) perception of attitude. (Snyder and Ebbeson, 1972, p. 514)

Bem (1972) simply reviewed the Snyder and Ebbeson experiment, indicated that the results were equivocal and noted that Snyder and Ebbeson proposed their own model of self-perception. He concluded that the clash between dissonance theory and self-perception theory was not as important as other unexplored areas of self-perception theory and that he will have nothing more to do with the conflict.

Ross and Shulman (1973) manipulated two variables in a third study of this issue. Subjects had to write counterattitudinal essays under conditions of either

choice or no choice. They were either shown or not shown their initial attitudes (which had been obtained a week earlier) immediately before the posttest. The results supported the dissonance theory prediction: increasing the salience of premanipulation attitudes did not reduce the dissonance effect whatsoever.

Green (1974) also examined the effects of initial attitudes upon attitude change within the forced compliance paradigm. However, Green examined the effect of the extremity of initial attitudes, rather than their reinstatement, upon attitude change. He manipulated two variables in a 2 x 2 design. Subjects were assigned to either a high thirst condition or a low thirst condition. Subjects were promised either \$2.50 or \$.50 to engage in a future water-deprivation experiment. According to Green, self-perception theory predicts that the extremity of initial attitude should have no effect upon attitude change whereas dissonance theory predicts that (1) the more extreme the initial attitude, the more subjects should change their attitudes in the direction of their counterattitudinal behavior; and (2) there should be a significant interaction between incentive and extremity of initial attitudes. The results supported the dissonance theory predictions.

Because of the inability of the last four studies to resolve the theoretical conflict surrounding reinstatement of initial attitudes, this author feels that another study of that topic is justified. Because the Green study does not actually deal with reinstated initial attitudes, it will not be considered further. The remaining three studies generated contradictory results. The Harris and Tamler and Ross and Shulman studies supported dissonance theory while the Snyder and Ebbeson experiment was largely in support of self-perception theory. These conflicting findings can be explained in part by methodological differences among the studies. Each study had a different operational definition of reinstated initial attitudes. Snyder and Ebbeson operationally defined reinstatement of initial attitudes as making subjects think about what their attitude was before they wrote their counter-attitudinal essay. Harris and Tamler defined the variable as showing subjects their pretest score before they wrote their essays. Ross and Shulman also showed their subjects their pretest scores but did so after they wrote their essays but before the posttest. Since the latter two experiments both generated dissonance results, it is possible that it is the manipulation itself rather than when it occurs that is the

critical factor.

The difference between the two manipulations is that in the Snyder and Ebbeson experiment, subjects think about their attitudes without making an overt behavioral commitment to those attitudes (such as marking an attitude scale). In the other two experiments, subjects do indicate their attitudes on an attitude scale pretest. This means that subjects in the Harris and Tamler and Ross and Shulman experiments made a commitment to their attitudes that the Snyder and Ebbeson subjects did not make.

This difference in the level of commitment in the experiments could account for the contradictory findings, particularly in light of the Kiesler, Roth and Pallak (1974) results. As noted previously, these researchers found that the more committed a subject was to his own attitudes, the less likely he was to test his beliefs by thinking about them and to undergo the belief-inference process. If this analysis is correct, then subjects who are simply asked to think about their beliefs before engaging in counterattitudinal behavior should not generate dissonance results. Subjects who are shown pretests indicating their initial beliefs on attitude scales should generate dissonance results.

More importantly, though, this author believes that all of the previous authors have overlooked a most important factor in the self-perception process. All of them have ignored how certain a subject is of his pretest attitude rating. Let us suppose the following situation: a subject indicates his attitude on a seven-point scale but is totally uncertain of what his attitude is. He is marking the scale only because the experimenter has asked him to do so. He then engages in counter-attitudinal behavior, and is shown his pretest. He is asked to indicate what his attitude is now. It seems obvious to this author that the pretest will not affect the attitude inference process in this situation because the pretest does not provide any valid information for the subject from which to make an inference. Given the choice of whether to make an inference from an uncertain attitude statement (based upon weak internal cues) or a certain behavior (based upon strong external cues) the subject will infer his belief from his behavior and dissonance results will still be generated.

Only when the subject is certain of his pretest rating will reinstatement of that rating interfere with the inference-making process. Self-perception theory states that a person will infer his beliefs from ex-

ternal cues only when internal cues are weak. Conversely, when internal cues are strong, subjects will tend to ignore external cues. Reinstatement of an opinion about which one is certain is nothing more than the reinstatement of a strong internal cue. Given such a cue, subjects will tend to ignore counterattitudinal behavior. In other words, dissonance results will not be generated in this latter case.

The purpose of this study is to examine the effects of topic certainty, counterattitudinal advocacy and reinstatement of initial attitudes upon attitude change, and to determine whether dissonance or self-perception theory is more parsimonious in explaining the results.

The hypotheses are as follows:

- (1) Subjects in the premanipulation attitude salience-pretest cells will evidence significantly greater attitude change in the direction of their counterattitudinal essays than will subjects in the corresponding control group.

This hypothesis is based on the Harris and Tamler (1971) and Ross and Shulman (1973) findings with a possible explanation provided by the Kiesler, Roth and Pallak (1974) study.

- (2) Subjects in the premanipulation attitude

salience-think about/certain topic condition will not show any significantly greater attitude change in the direction of their counterattitudinal essay than will subjects in the corresponding control group.

This hypothesis is based on the Snyder and Ebbeson (1972) study and on the author's own analysis of self-perception theory as explained previously.

(3) Subjects in the premanipulation attitude salience-think about/uncertain topic condition will show significantly greater attitude change in the direction of their counterattitudinal essay than will subjects in the corresponding control group.

Hypothesis two is the critical one in terms of the dissonance/self-perception theory controversy. It is based on self-perception theory predictions. A failure to support this hypothesis would thus be support for dissonance theory.

Both theories predict hypotheses one and three according to this analysis. Failure to support one of these hypotheses would thus constitute a blow to both theories.

Method

Overview of Design

This study was a modified 2 x 2 x 4 design. The independent variables were topic certainty, counterattitudinal advocacy, and premanipulation attitude salience. The dependent variable was attitude change. See Appendix A for further clarification.

Subjects

Eighty-eight undergraduate students enrolled in beginning speech courses at Florida Technological University served as subjects in this experiment. This allowed the assignment of six subjects per cell. They participated in the study to fulfill the experimental participation opportunity of the course.

Independent Variables

Topic certainty. This variable was operationally defined in terms of a pilot study. This author made up a list of thirty topics that he considered to be counterattitudinal for most college students. These were presented to twenty-three beginning speech students. They rated the topics on two seven-point semantic differential scales. The first was an agree-disagree scale. The second was a certain-uncertain scale. The author selected from this list two topics that were nearly equally counterattitudinal but as widely separated on the certain-uncertain scale as possible. There were thus two levels of topic cer-

tainty: certain and uncertain. The pilot was run one week before the actual experiment. To further increase the spread between certain and uncertain groups, the subjects in the certain group were provided with an informative paragraph on their topic to read before writing their counterattitudinal essays (in cells one through four) or before the posttest (in cells five and six).

Counterattitudinal advocacy. This variable was operationally defined in terms of counterattitudinal essay writing. Those subjects who experienced the counterattitudinal behavior wrote the essay. Of course, those subjects who did not have such an experience did not write the essay. There were thus two conditions: essay and no essay.

Reinstatement of initial attitudes. There were four levels of this variable. The first corresponded to the Harris and Tamler (1971) study. That is, subjects first filled out a pretest on the key topic item. They were then shown that score one week later immediately after which they wrote the counterattitudinal essay. Subjects then completed the posttest. The second level corresponded to the Ross and Shulman (1973) study. This level was identical to level one except that the subjects were shown their pretest score after

their essay writing but before the posttest. The third level corresponded to the Snyder and Ebbeson (1972) study. In this level, subjects were instructed to think carefully about their attitude on the topic after which they wrote their essay. Subjects then completed the posttest. The fourth level was a control condition in which there was no attitude salience manipulation.

Dependent Variable and Manipulation Checks

The dependent variable was attitude change. It was operationally defined in terms of pretest and posttest scores. The pretest was identical to the questionnaire used in the pilot study. The posttest contained the attitude scale for either the certain or uncertain topic and in addition contained the following: a semantic differential scale (comfortable-uncomfortable) to check on the dissonance manipulation; a question asking the subjects to indicate what their initial attitudes were on the key item; and a semantic differential scale (very little-very much) for subjects to indicate how much they thought about their attitudes before they wrote their essays. These checked the dissonance manipulation, how much subjects remember their initial attitude, and the premanipulation attitude salience-think about manipulation, respectively. The topic certainty manipulation was automatically checked

since both pretest and posttest contained the certainty scale. The attitude salience-pretest manipulation was checked by simply observing whether subjects correctly recorded their pretest scores on their essays.

Procedure

The procedural order is summarized in Appendix A.

There were four paragraphs of instructions that were used in various combinations for all of the subjects. They were as follows:

Paragraph one. This is a preliminary study of university students' attitudes towards various topics. Please write in the upper left hand corner of the first page the last four digits of your social security number, and the course and section number. This is strictly for data organization purposes within the experiment. I will make no attempt to find out who any of you are. Indeed, with only four numbers I could not do so even if I wanted to. There are thirty topics on these sheets. Please notice that there are topics on both sides of the sheets. Please read each one carefully. After you read each one, you will find two scales. First indicate by circling the appropriate number how much you agree or disagree with the topic. One indicates maximum disagreement, seven indicates maximum agreement while four is the neutral point

indicating you neither agree nor disagree with the statement. The other numbers represent either increasing agreement or disagreement. Please consider all of the factors for and against each topic before marking your answer. After you finish the first scale, indicate on the second scale how certain you are of your answer on the first scale. Scale markings are similar, with one indicating maximum uncertainty, seven maximum certainty and four is the neutral point. Please consider carefully how much you actually know about each topic before marking the second scale. Continue in this manner until you have completed all thirty items. It should take you fifteen minutes or less to answer all thirty items. Are there any questions?

Paragraph two. This week we are collecting arguments for and against the various positions expressed in the previous questionnaire. It has been found that one of the best ways to get all of the arguments on both sides of an issue is to have people write an essay on only one side. So I would appreciate it if you would write an essay which argues as convincingly as possible that (either the certain or uncertain topic was inserted here). Please write it on this sheet of paper. You may use the back if necessary.

Paragraph three. Here are your original ques-

tionnaires. Would each of you look on his or her questionnaire, find the question that is relevant to the topic of the essay, record the number of the question and your attitude score in the spaces provided below to make our computations easier?

Paragraph four. Before proceeding further, take a few minutes to think about and organize your thoughts and views on the above stated topic. (At this point, several questions were asked suggesting possible dimensions of the topic for the student to consider). DO NOT PROCEED FURTHER UNTIL YOU HAVE FULLY ORGANIZED YOUR THOUGHTS ON THIS ISSUE. Once you have organized your thoughts, then proceed to write the essay.

The instructions in paragraph one were made up by the present author. The instructions in paragraphs two and three were taken and modified from the Ross and Shulman (1973) study, while the instructions in paragraph four were taken literally from the Snyder and Ebbeson (1972) study.

Subjects in cells one, two, five, seven, eight and eleven were given the pretest with the instructions in paragraph one. One week later, the rest of the experimental manipulations were run. Subjects in cells one and seven were shown their pretests and given the instructions in paragraph two. They wrote their essay

following the instructions in paragraph three. Subjects in cells two and eight simply reversed this order. Subjects in cells three and nine received the instructions in paragraph four and then wrote their essay after receiving the instructions in paragraph two. Subjects in cells four and ten received the instructions in paragraphs one and two. Subjects in cells five and eleven were given the instructions in paragraph three. Subjects in cells six and twelve got the instructions in paragraph four. Subjects in cells thirteen and fourteen were given the instructions in paragraph one.

After all manipulations, all subjects filled out the posttest.

Students were randomly assigned to cells within pretest and no pretest blocks. The reason for assigning within blocks was that it would have been impossible to keep non-pretested students from being contaminated if pretested and non-pretested students had been mixed.

Data Analysis

The data analysis was run as follows: (a) a t-test was run between cells thirteen and fourteen to determine if the pretest had any significant effect upon attitude change; (b) analysis of variance tests were run on the three independent variables to determine main effects;

and (c) t-tests were run on the following pairs of cell means to test the three hypotheses:

1. hypothesis one
 - a. one and nine
 - b. two and nine
 - c. five and eleven
 - d. six and eleven
2. hypothesis two - three and ten
3. hypothesis three - seven and twelve.

Results

Manipulation Checks

Counterattitudinal advocacy. Three separate indices indicated that this manipulation was effective. First, all experimental subjects who took the pretest disagreed with the two topics. Thus the topics proved to be counterattitudinal just as they did in the pilot study. Second, all forty-eight subjects asked to write counterattitudinal essays did so. And third, dissonance theory predicts that writing a counterattitudinal essay produces drive, an uncomfortable state. Subjects who wrote the counterattitudinal essay were significantly more uncomfortable than those who did not do so, $F(1,86) = 12.2329, p < .001$. Thus the counterattitudinal advocacy manipulation seems to have been effective.

Reinstatement of initial attitude. All forty-four

subjects in the pretest conditions copied their pretest scores correctly. This manipulation was thus effective. The mean for all subjects in the think about condition on the think about scale was 4.00. Subjects in this condition wrote longer essays than subjects in any other reinstatement condition (see Table 6). An analysis of variance between the think about cells versus the other reinstatement conditions did not reveal any significant differences, $F(1,46) = .9334$, 4.08 critical value. An analysis of variance of the four reinstatement conditions also showed non-significant differences, although the relationship was stronger than the previous one, $F(3,44) = 1.7867$, 2.84 critical value (see Table 11). Although the latter F -tests did not reveal significant differences, this does not mean that the think about manipulation was ineffective. Since all of the think about means were rather high, it seems more reasonable to conclude that non-think about subjects also put some thought into their essays, even though they were not specifically instructed to do so, rather than that the think about subjects did not think about their essays. Based upon the fact that think about subjects had a high think about mean and wrote the longest essays, it seems that the think about manipulation was at

least marginally effective.

Topic certainty. The two topics chosen were "Alcoholic beverages should be banned from the FTU campus," and "Power plants should be allowed to burn high sulfur coal even if more air pollution is created." In the pilot study ($N=23$) it was found that the two topics were nearly equally counterattitudinal (means of 1.82 and 1.87 respectively on the attitude scale). The two topics were the most divergent on the certainty scale of the thirty pretested topics (means of 6.00 and 5.04 respectively). The difference between the two topics was just short of statistical significance, $F(1,44) = 3.8274$, critical value of 4.08 (see Table 12). However, this difference all but disappeared on the posttest for the experimental groups, $F(1,86) = .2943$, critical value of 4.00 (see Table 13). The means were 6.05 on the certain topic and 5.91 for the uncertain topic. Thus most of the change was accounted for by students who became more certain about the uncertain topic. Since the pilot and the experimental groups were all run within one week of each other, and no major events occurred during those two weeks that would change students' attitudes toward either topic, it does not seem that the subjects' history accounted for such a change. It would seem rather that the dif-

ference was due simply to chance variation.

Effects on Dependent Variables

Pretest effects. Comparisons of cells thirteen and fourteen revealed no significant effects of the pretest on the posttest in terms of attitude change. The means did not differ significantly on either the certain topic, $t(6) = .2254$, or the uncertain topic, $t(6) = .2767$. Similarly, no significant effects occurred on the certainty scale. The means did not differ significantly on either the certain topic, $t(6) = .2926$, or the uncertain topic, $t(6) = 1.5163$.

Essay length. There were no significant differences in the length of essays between conditions. The mean essay lengths between reinstatement conditions on the certain topic did not differ significantly, $F(1,46) = .3854$ (see Table 16). These non-significant differences were due more to the large within cells variation than to the lack of variation between cells. The range of essay lengths was from fifteen to two hundred twelve words. Lengths were widely scattered throughout this range, thus indicating that there was a wide variation in the degree to which subjects engaged in counterattitudinal behavior.

Attitude change. No significant main effects were found for any of the three independent variables. The

difference between certain and uncertain groups was very insignificant, $F(1,86) = .0396$ (see Table 17). Surprisingly, there was also no difference in attitude scores between essay and no essay groups, $F(1,86) = .1324$ (see Table 18). Reinstatement of initial attitudes also had no significant effect upon attitude change, $F(2,86) = 1.5540$ (see Table 19). Counter-attitudinal advocacy had no significant effect upon attitude change on both the certain topic, $F(1,42) = .9238$ (see Table 20), and the uncertain topic, $F(1,42) = .3400$ (see Table 21).

Hypothesis one predicted that there would be a significant difference between any group of subjects who were shown their pretests and wrote a counter-attitudinal essay and the appropriate control group in terms of their attitude scores. Four cell comparisons were made to test this hypothesis. All t -tests were one-tailed. There was a significant difference in the mean attitude scores of cells one and four, $t(10) = 1.83$, $p < .05$. There were no significant differences in the other three comparisons: cells two and four, $t(10) = .1190$; cells seven and ten, $t(10) = 1.0397$; and cells eight and ten, $t(10) = .6942$. Hypothesis one was thus only partially confirmed.

Hypothesis two predicted a significant difference

between cells three and four. No such difference occurred, $t(10) = .3367$.

Hypothesis three predicted no significant difference between cells nine and ten. This was confirmed, $t(10) = .6099$.

However, these predictions were based upon the assumption that cells four and ten would differ significantly from their control groups. No such differences occurred. Cell four did not differ significantly from cell fourteen, $t(8) = .8546$, and cell ten did not differ significantly from cell fourteen, $t(8) = .3780$. Because this assumption was not confirmed, none of the hypothesis confirmations may be regarded as valid.

Contrary to the Bem and McConnell (1970) study, forty-three out of forty-four pretested subjects did remember their pretest scores.

The only significant findings involving individual cell comparisons revolved around cells one and eight. Cell one differed significantly from cell four, $t(10) = 1.8278$, $p < .05$; from cell five, $t(10) = 2.5743$, $p < .05$; and from cell two, $t(10) = 2.9854$, $p < .01$. Cell eight just missed statistical significance in differing from cells seven and eleven, $t(10) = 1.7056$, for both comparisons.

Discussion

Both dissonance and self-perception theories seem highly inadequate to explain the behavior observed in this experiment in that none of the hypotheses derived from these two theories was upheld.

The main failure that needs to be explained is why subjects who wrote counterattitudinal essays, despite the fact that they felt very uncomfortable as predicted by dissonance theory, failed to change their attitudes. This fact is made more graphic by the finding that forty out of forty-four pretested subjects replicated their pretest scores on both the attitude and certainty scales of the posttest. Of the four who changed their attitudes, three changed in the direction of their essay, while one changed counter to the essay. A combination of four factors seems to have brought about this outcome. The first factor is the extremely wide range of both essay length and quality. Due to the wide variation in commitment to and actual encoding of the counterattitudinal essays randomly distributed in the sample, one could only expect a wide variation due to chance in attitude change. If attitude change scores are randomly distributed in a sample, of course no main effects will show up in the data analysis. As to why there was such a disparity in essay length

in the first place, no satisfactory answer can be given. The instructions used in this study were the same as those used in the Ross and Shulman study which supposedly generated fairly consistent, high quality essays. It is hard to accept the suggestion that FTU students simply are more obtuse than subjects than subjects used in previous dissonance studies.

Second, most of the subjects in this experiment had extreme attitude scores and were quite certain of these scores despite the fact that they knew very little about either topic, particularly the uncertain topic. The fact that subjects knew very little about either topic is supported by several qualitative observations. First, several subjects refused to write the counterattitudinal essay saying that they did not know enough about the topic. But they filled out the posttest and marked an extreme attitude position about which they were quite sure. Second, most of the essays were of rather poor quality. Very few arguments were devised; those arguments that were presented were thinly supported. Third, many subjects who wrote the counterattitudinal essay did so only after complaining that they did not know anything about the topic. Thus the attitude statements obviously constituted strong internal cues for most subjects. Given such dogmatic,

highly certain extreme attitudes, it does seem likely that most people would do everything possible to replicate their pretest scores. This is at least interpretable from a self-perception theory point of view. The more committed a person is to his attitude and the stronger an internal cue is, the less likely the person is to undergo the self-perception process.

Third, given that the subjects had such certain, extreme attitudes, it appears that writing the counter-attitudinal essay was not defined by the subjects at the level of their own self-concepts. Both dissonance and self-perception theories require subjects to consider the justification for writing a counterattitudinal essay. In this experiment, it is doubtful whether the subjects ever got that far. In this case, they simply willingly obeyed the experimenter. Many of the results of this experiment thus can be described as the results of experimental demand. This is also interpretable from a self-perception theory point of view. Kiesler, Roth and Pallak (1974) noted that sometimes subjects must be directed by the experimenter to consider their own beliefs in order for the self-perception process to take place.

And finally four, subjects may have engaged in alternative means to reduce their discomfort other than

attitude change. For example, they may have increased their evaluation of the experimenter, increased their evaluation of science as a legitimate social enterprise, increased their evaluation of the classroom credit they were getting for the experimental participation or in some other way justified in their own minds why they were writing down arguments in which they did not believe. Given that subjects had such certain, extreme attitudes, it would seem reasonable that they would try to maintain their attitude position and change something else to reduce their discomfort.

One explanation that does not fully account for the results is the self-perception theory claim that reinstatement of the initial attitudes ruins the "dissonance" effect. This does not explain the lack of difference between cells four and fourteen and between cells ten and fourteen.

The significant differences between cell one and the cells around it cannot be explained theoretically. The only logical explanation is that the random assignment of subjects left six subjects in cell one who naturally disagreed very much with the topic. In other words, some selection effects took place.

The reinstatement manipulation was based on the essay manipulation succeeding. That is, the predictions

were that reinstatement of initial attitudes would ruin the counterattitudinal manipulation. Since the advocacy manipulation had no effect, it was impossible to determine if the reinstatement had any effect.

The certainty manipulation is somewhat weak. Further studies need to find a topic that people will admit knowing very little about and still find counterattitudinal.

Three suggestions are offered for future research. First, when subjects are asked to write a counterattitudinal essay, they should be asked to write a certain minimum length to guarantee that subjects exert some minimum level of effort in writing the essay. Second, further work must be done on finding a topic that subjects find counterattitudinal but about which they are uncertain. And third, the experimenter should introduce a cue for the subjects to consider their justification for performing the counterattitudinal behavior just before the posttest.

In summary, none of the three experimental hypotheses was confirmed. This was because subjects did not change their attitudes after writing a counterattitudinal essay even though the writing made them uncomfortable. This condition was necessary in order to measure the effects of the other two variables.

Appendix A

Summary of Procedural Order

Topic	Cell No.	Pre- test	One Week Delay	Attitude Salience	Essay	Attitude Salience	Post- test
Certain	1	X	X	show pretest	X		X
	2	X	X		X	show pretest	X
	3			think about	X		X
	4				X		X
	5	X	X	show pretest			X
	6			think about			X
Uncertain	7	X	X	show pretest	X		X
	8	X	X		X	show pretest	X
	9			think about	X		X
	10				X		X
	11	X	X	show pretest			X
Control	12			think about			X
	13	X					X
	14						X

Tables of Data Analysis

Table 1

Mean Comfort Scores, Counterattitudinal Advocacy x
Reinstated Initial Attitude Conditions, Certain Topic

<u>Reinstated Initial Attitude</u>	<u>Counterattitudinal Advocacy</u>	
	Essay	No Essay
Pretest, Pre-essay	4.50	
Pretest, Post-essay	5.50	2.50
Think About	3.33	2.83
None	2.33	4.00

N = 6 for all cells except none/no essay where N = 8.

Table 2

Mean Comfort Scores, Counterattitudinal Advocacy x
Reinstated Initial Attitude Conditions, Uncertain Topic

<u>Reinstated Initial Attitude</u>	<u>Counterattitudinal Advocacy</u>	
	Essay	No Essay
Pretest, Pre-essay	4.50	
Pretest, Post-essay	4.50	2.83
Think About	4.67	2.67
None	4.33	2.25

N = 6 for all cells except none/no essay where N = 8.

Table 3

Mean Amount of Thought Scores, Certainty of Topic x
Reinstated Initial Attitude Conditions, Essay Condition

<u>Reinstated Initial Attitudes</u>	<u>Topic Certainty</u>	
	<u>Certain</u>	<u>Uncertain</u>
Pretest, Pre-essay	2.00	3.33
Pretest, Post-essay	2.83	4.33
Think About	3.67	4.33
None	3.83	4.33

N = 6 for all cells.

Table 4

Mean Certainty Scores, Counterattitudinal Advocacy x
Reinstated Initial Attitude Conditions, Certain Topic

<u>Reinstated Initial Attitudes</u>	<u>Counterattitudinal Advocacy</u>	
	<u>Essay</u>	<u>No Essay</u>
Pretest, Pre-essay	6.83	5.33
Pretest, Post-essay	4.67	
Think About	6.83	5.83
None	6.33	6.38

N = 6 for all cells except none/no essay where N = 8.

Table 5

Mean Certainty Scores, Counterattitudinal Advocacy x
Reinstated Initial Attitude Conditions, Uncertain Topic

<u>Reinstated Initial Attitude</u>	<u>Counterattitudinal Advocacy</u>	
	<u>Essay</u>	<u>No Essay</u>
Pretest, Pre-essay	6.83	6.17
Pretest, Post-essay	5.33	
Think About	4.83	6.50
None	5.67	6.00

N = 6 for all cells except for none/no essay where N = 8.

Table 6

Mean Length of Essays, Topic Certainty x Reinstated
Initial Attitude Conditions Within Essay Condition

<u>Reinstated Initial Attitude</u>	<u>Topic Certainty</u>	
	<u>Certain</u>	<u>Uncertain</u>
Pretest, Pre-essay	66.00	62.50
Pretest, Post-essay	51.17	86.50
Think About	101.00	102.17
None	76.33	70.50

N = 6 for all cells.

Table 7

Mean Attitude Scores, Counterattitudinal Advocacy x
Reinstated Initial Attitude Conditions, Certain Topic

<u>Reinstated Initial Attitude</u>	<u>Counterattitudinal Advocacy</u>	
	<u>Essay</u>	<u>No Essay</u>
Pretest, Pre-essay	1.17	2.33
Pretest, Post-essay	3.00	
Think About	2.83	2.17
None	3.33	2.13

N = 6 for all cells except none/no essay where N = 8.

Table 8

Mean Attitude Scores, Counterattitudinal Advocacy x
Reinstated Initial Attitude Conditions, Uncertain Topic

<u>Reinstated Initial Attitude</u>	<u>Counterattitudinal Advocacy</u>	
	<u>Essay</u>	<u>No Essay</u>
Pretest, Pre-essay	1.30	1.50
Pretest, Post-essay	2.83	
Think About	2.67	3.83
None	2.17	2.38

N = 6 for all cells except none/no essay where N = 8.

Table 9

One-way Analysis of Variance, Comfortable Scale,
Essay v. No Essay

source	SS	df	MS	Computed F	Tabled F
between	40.2561	1	40.2561	12.2329*	12.0
within	283.0167	86	3.2908		
total	323.2728	87			

*p < .001

Table 10

One-way Analysis of Variance, Think

About Scale, Think About Cells v. All Others

source	SS	df	MS	Computed F	Tabled F
between	2.7778	1	2.7778	.9334	4.08
within	136.8889	46	2.9758		
total	139.6667	47			

Table 11

One-way Analysis of Variance, Think About Scale, Between
Reinstatement of Initial Attitude Levels, Topics Collapsed

source	SS	df	MS	Computed F	Tabled F
between	15.1666	3	5.0555	1.7867	2.84
within	124.5001	44	2.8295		
total	139.6667	47			

Table 12

One-way Analysis of Variance, Certainty Scores,
Certain v. Uncertain Groups, Pilot

source	SS	df	MS	Computed F	Tabled F
between	10.5217	1	10.5217	3.8274	4.08
within	120.9566	44	2.7490		
total	131.4783	45			

Table 13

One-way Analysis of Variance, Certainty Scores,
Certain v. Uncertain Groups, Experimental

source	SS	df	MS	Computed F	Tabled F
between	.4091	1	.4091	.2943	4.00
within	119.5455	86	1.3900		
total	119.9546	87			

Table 14

One-way Analysis of Variance, Essay Length, Certain
Topic, Between Reinstatement of Initial Attitude Levels

source	SS	df	MS	Computed F	Tabled F
between	7915.4582	3	2638.4860	1.3748	3.10
within	38382.1668	20	1919.1083		
total	46297.6250	23			

Table 15

One-way Analysis of Variance, Essay Length, Uncertain
Topic, Between Reinstatement of Initial Attitude Levels

source	SS	df	MS	Computed F	Tabled F
between	5576.5000	3	1858.8333	2.6200	3.10
within	14189.3334	20	709.4666		
total	19765.8334	23			

Table 16

One-way Analysis of Variance, Essay Length,

Certain x Uncertain Groups

source	SS	df	MS	Computed F	Tabled F
between	553.5208	1	553.5208	.3854	4.08
within	66063.4584	46	1436.1621		
total	66616.9792	47			

Table 17

One-way Analysis of Variance, Attitude Change,

Certain x Uncertain Groups

source	SS	df	MS	Computed F	Tabled F
between	.1023	1	.1023	.0396	4.00
within	221.6137	86	2.5769		
total	221.7160	87			

Table 18

One-way Analysis of Variance, Attitude Change,

Essay x No Essay

source	SS	df	MS	Computed F	Tabled F
between	.3410	1	.3410	.1324	4.00
within	221.3750	86	2.5741		
total	221.7160	87			

Table 19

One-way Analysis of Variance, Attitude Change,

Pretest x Think About x None Reinstatement Levels

source	SS	df	MS	Computed F	Tabled F
between	7.8211	2	3.9105	1.5540	3.15
within	213.8949	85	2.5164		
total	221.7160	87			

Table 20

One-way Analysis of Variance, Attitude Change,

Essay v. No Essay, Certain Topic

source	SS	df	MS	Computed F	Tabled F
between	2.8189	1	2.8189	.9238	4.08
within	128.1584	42	3.1513		
total	130.9773	43			

Table 21

One-way Analysis of Variance, Attitude Change,

Essay v. No Essay, Uncertain Topic

source	SS	df	MS	Computed F	Tabled F
between	.7280	1	.7280	.3400	4.08
within	89.9084	42	2.1406		
total	90.6364	43			

References

- Arrowood, A.J., Wood, L., and Ross, L. Dissonance, self-perception and the perception of others: A study in cognitive cognitive dissonance. Journal of Experimental-Social Psychology, 1970, 6, 304-315.
- Bandler, R.J., Madaras, G.R., and Bem, D.J. Self observation as a source of pain perception. Journal of Personality and Social Psychology, 1968, 9, 205-209.
- Bem, D.J. An experimental analysis of self-persuasion. Journal of Experimental Social Psychology, 1965, 1, 199-218.
- Bem, D.J. Inducing belief in false confessions. Journal of Personality and Social Psychology, 1966, 3, 707-710.
- Bem, D.J. Self-perception: An alternative interpretation of cognitive dissonance phenomena. Psychological Review, 1967, 74, 183-200. (a)
- Bem, D.J. Reply to Judson Mills. Psychological Review, 1967, 74, 536-537. (b)
- Bem, D.J. The epistemological status of interpersonal simulations: A reply to Jones, Linder, Kiesler, Zanna and Brehm. Journal of Experimental Social Psychology, 1968, 4, 270-274.
- Bem, D.J. Self-perception theory. In L. Berkowitz (Ed.), Advances in experimental social psychology (Vol. 6). New York: Academic Press, 1972.
- Bem, D.J., and McConnell, H.K. Testing the self-perception explanation of dissonance phenomena: On the salience of premanipulation attitudes. Journal of Personality and Social Psychology, 1970, 14, 23-31.
- Berkowitz, L., Lepinski, J.P., and Angulo, E.J. Awareness of own anger level and subsequent aggression. Journal of Personality and Social Psychology, 1969, 11, 293-300.
- Cooper, J., Jones, E.E., and Tuller, S.M. Attribution, dissonance and the illusion of uniqueness. Journal

of Experimental Social Psychology, 1972, 8, 45-57.

Cottrell, N.B., Rajecki, D.W., and Smith, D.U. The energizing effects of post-decision dissonance upon performance of an irrelevant task. Journal of Social Psychology, 1974, 93, 81-92.

Cottrell, N.B., and Wack, D.C. The energizing effect of cognitive dissonance upon dominant and subordinate responses. Journal of Personality and Social Psychology, 1967, 6, 132-138.

Davison, G.C., and Valins, S. On self-produced and drug-produced relaxation. Behavior Research and Therapy, 1968, 6, 401-402.

Festinger, L. A theory of cognitive dissonance. Stanford, Calif.: Stanford University Press, 1957.

Festinger, L., and Carlsmith, J.W. Cognitive consequences of forced compliance. Journal of Abnormal and Social Psychology, 1959, 58, 203-210.

Green, D. Dissonance and self-perception analysis of "Forced compliance": When two theories make competing predictions. Journal of Personality and Social Psychology, 1974, 29, 819-828.

Harris, V.A., and Tamler, H. Reinstatement of initial attitude and forced-compliance attitude change. Journal of Social Psychology, 1971, 84, 127-134.

Jones, R.A., Linder, D.E., Kiesler, C.A., Zanna, M.P., and Brehm, J.W. Internal states of external stimuli: Observer's attitude judgments and the dissonance theory self-persuasion controversy. Journal of Experimental Social Psychology, 1968, 4, 247-269.

Kelley, H.H. Attribution theory in social psychology. In D. Levine (Ed.), Nebraska symposium on motivation: 1967. Lincoln: University of Nebraska Press, 1967.

Kiesler, C.A., Nisbett, R.A., and Zanna, M.P. On inferring one's beliefs from one's behavior. Journal of Personality and Social Psychology, 1969, 11, 321-327.

Kiesler, C.A., Roth, T.S., and Pallak, M.S. Avoidance and reinterpretation of commitment and it's im-

plications. Journal of Personality and Social Psychology, 1974, 30, 705-715.

Kopel, S.A., and Arkowitz, H.S. Role playing as a source of self-observation and behavior change. Journal of Personality and Social Psychology, 1974, 29, 677-686.

Lepper, M.R. Dissonance, self-perception and honesty in children. Journal of Personality and Social Psychology, 1973, 25, 65-74.

Mills, J. Comment on Bem's "Self-perception: An alternative interpretation of cognitive dissonance phenomena." Psychological Review, 1967, 74, 535.

Misovich, S., and Charis, P.C. Information need, affect and cognition of autonomic activity. Journal of Experimental Social Psychology, 1974, 10, 274-283.

Nisbett, R.E., and Schacter, S. The cognitive manipulation of pain. Journal of Experimental Social Psychology, 1966, 2, 227-236.

Nisbett, R.E., and Valins, S. Perceiving the causes of one's own behavior. New York: General Learning Press, 1971.

Pallak, M.S., Brock, T.C., and Kiesler, C.A. Dissonance arousal and task performance in an incidental verbal learning paradigm. Journal of Personality and Social Psychology, 1967, 7, 11-20.

Ross, M., and Shulman, R.F. Increasing the salience of initial attitudes: Dissonance versus self-perception theory. Journal of Personality and Social Psychology, 1973, 28, 138-144.

Schacter, S. The interaction of cognitive and physiological determinants of emotional state. In L. Berkowitz (Ed.), Advances in experimental social psychology (Vol. 1). New York: Academic Press, 1964.

Schacter, S., and Singer, J. Cognitive, social and physiological determinants of emotional states. Psychological Review, 1962, 69, 370-399.

Simons, H.W. Persuasion and attitude change. In R.J.

Kibler and L.L. Barker (Eds.), Speech communication behavior: Perspectives and principles. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1971.

~~Snyder~~, M., and Ebbeson, E. Dissonance awareness: A test of dissonance theory versus self-perception theory. Journal of Experimental Social Psychology, 1972, 8, 502-517.

Turner, C.W., and Berkowitz, L. Identification with film aggressor (covert role taking) and reactions to film violence. Journal of Personality and Social Psychology, 1972, 21, 256-264.

Valins, S. Cognitive effects of false heart-rate feedback. Journal of Personality and Social Psychology, 1966, 4, 400-408.

Valins, S. Emotionality and information concerning internal reactions. Journal of Personality and Social Psychology, 1967, 6, 458-463.

Waterman, C.K. The facilitating and interfering effects of cognitive dissonance on simple and complex paired associates learning tasks. Journal of Experimental Social Psychology, 1967, 5, 31-42.

Waterman, C.K., and Katkin, E.S. The energizing (dynamogenic) effect of cognitive dissonance on task performance. Journal of Personality and Social Psychology, 1967, 6, 126-131.

~~Williams~~, D.C., Crawford, J.L., and Haaland, G.A. Cognitive cognitive dissonance revisited. Journal of Social Psychology, 1974, 92, 319-320.

~~Zajonc~~, R. The concepts of balance, congruity and dissonance. Public Opinion Quarterly, 1960, 24, 280-296.

Zanna, M.P., and Cooper, J. Dissonance and the pill: An attribution approach to studying the arousal properties of dissonance. Journal of Personality and Social Psychology, 1974, 29, 703-709.